ALTERNATIVE E - DELTA CHANNEL HABITAT AND CONVEYANCE

Reduce Conflicts in the System

A solution will reduce major conflicts among beneficial users of water. A solution should:

- significantly reduce each of the four major conflicts which have been identified for the Bay-Delta system. Most of the problems in the Bay-Delta are embodied in one or more of these conflicts. They are:

  - fisheries and diversions - **low, export pumping from the South Delta continues without major screening improvements, however this alternative contains large amounts of new aquatic habitat; if this habitat successfully restores fish populations, this alternative could rate high on this factor even with the continued export pumping. The uncertainty of the realized fish production and migration routes contributes to the low rating.**

  - habitat and land use/flood protection - **medium, only moderate vulnerability reduction is included. Export diversions remain vulnerable.**

  - water supply availability and beneficial uses - **low/medium, limited water supply benefits unless and until fish populations recover. The uncertainty and narrow focus limits this alternative.**

  - water quality and land use - **medium/low, salinity intrusion and bromide intrusion into the Central Delta may be increased by this alternative because the volume of tidal change is significantly increased, limited improvement in export water quality since export pumping from South Delta continues, partially offset by extensive pollutant source controls.**

LOW/MEDIUM

Equitable

An equitable solution will focus on solving problems in all problem areas. Improvement for some problems will not be made without corresponding improvements for other problems. Equitable considerations include:

- satisfy some portion of each of the 4 primary and 14 secondary objectives which have been identified for the program - **High, addresses some portion of all objectives.**

- provide a reasonable balance of reliability weighted improvements for the four resource areas. Balance does not necessarily require an equal level of improvement for each resource areas (e.g. water exporters might be willing to accept less improvement in water supply reliability if water quality is improved). - **Low/medium, relative uncertainty that fish populations will improve adequately as a result of the proposed habitat improvements, therefore water supply improvements are somewhat uncertain and unreliable.**

- result in costs allocated to the economic users of water based on the benefits they receive from the solution. However, there is no obligation to provide benefits to those unwilling to contribute towards the solution - **Unable to consider this factor in the absence of a financing plan.**

- result in net benefits and burdens balanced across stakeholder groups - **Low /medium the benefits to supply are uncertain and the burdens on San Joanquin Valley due to land retirement communities.**

LOW/MEDIUM

Affordable

An affordable solution will be one that can be implemented and maintained within the foreseeable resources of the Program and stakeholders. An affordable solution should:

- have identifiable revenue and financing provisions which are adequate for implementation and continued maintenance of the solution - **Unable to consider this factor in the absence of a financing plan.**

- be among the least expensive solutions, for a given level of implementation, which achieve the Program objectives - **Low/medium, due to the perceived limited cost-effectiveness of this solution; the new habitat and channel improvements cost a lot while providing only limited water supply benefits. Discounted for the uncertainty**

of water supply benefits.

- minimize the negative effects on the credit rating of those funding the solution - **Unable to consider this factor in the absence of a financing plan.**

LOW/MEDIUM

Durable

A durable solution will have political and economic staying power and will sustain the resources it was designed to protect and enhance. A durable solution should:

- be adaptive, flexible to changing needs and potential future conditions, and able to address biological uncertainty to sustain the resources it was designed to protect and enhance - **Low, this alternative relies primarily on the theory that increased areas of shallow water habitat in the North Delta will recover fish populations to a level that will accommodate continued export pumping from the South Delta. This approach is poorly understood, may be incorrect and is therefore risky (e.g., predation of desirable species may actually be increased). If the intended accomplishments of this alternative do not occur, this alternative would have a limited ability to adapt (i.e., the investment will have already been made, and much time will have spent waiting for this solution to work).**

- provide ecosystem improvement using a variety of mechanisms to better face biological uncertainty rather than relying on any single theory of ecosystem improvement - **Low, this alternative relies almost entirely on a single remedial theory.**

- accommodate hydrological and other physical uncertainties (e.g. increased storage would hedge against the unknown, or consideration of impacts of potentially higher sea levels on the various alternatives could strengthen durability) - **Low, increased channel widths may actually increase the vulnerability of adjacent lands to catastrophic failure. The continued South Delta export diversions are more suspect to interruption due to higher sea levels (increased flood risk) and additional species listings.**

- have adequate legal, operational, or physical provisions to ensure that objectives continue to be met in an equitable way for the long term - **High/medium, because the basic conveyance configuration of the Delta is unchanged, existing hydraulic constraints on export diversions remain.**

- include a financial plan which has provisions to ensure that the solution will be implemented as intended, while providing flexibility to alter revenues to respond to changing needs - **Low/medium, because the results of the habitat restoration are not readily quantifiable and accountable. Specific beneficiaries and clearly allocable benefits are not present with this alternative.**

LOW

Implementable

An implementable solution will have broad public acceptance, legal feasibility and will be timely and relatively simple to implement compared to other alternatives. An implementable solution should:

- have legal or practical precedents or have a clearly identified series of reasonable steps which could be taken to enable implementation - **Medium/high, relative to the other alternatives, development of new storage and habitat restoration projects is reasonably straightforward, requiring Section 404, NEPA, and CEQA compliance.**

- have institutional feasibility - **High, this alternative could be implemented by and within existing institutional authorities.**

- include as few major legal and institutional changes as necessary while meeting Program objectives - **High, this alternative could be implemented by and within existing institutional authorities.**

- have broad acceptance across the various geographic areas and interest groups as well as the state as a whole - **Medium, discounted because this alternative may be perceived by some groups to offer insufficient water supply, and water quality benefits.**

MEDIUM/HIGH

No Significant Redirected Impacts

A solution will not solve problems in the Bay-Delta system by redirecting significant negative impacts, when viewed in its entirety, in the Bay-Delta or other regions of California. A solution should:

- minimize negative long-term economic impacts at the regional level - **Medium,**

relatively small amounts of land-use change compared to other alternatives. Third party impacts on land use change , for retirement, and set back levees.

- compensate for or mitigate unavoidable negative impacts to the greatest extent practicable - **Medium, relatively small amounts of land-use change compared to other alternatives.**

MEDIUM

POTENTIAL REVISIONS

Revision	Principle Improved	Rationale	Potential Adverse Affects
Extend channel improvements south of the San Joaquin River	Reduce Conflicts, Equitable, Affordable, Implementable	Adds additional habitat which increases fish production and generates water supply benefits	Uncertainty that the fish will not be drawn to pumps, Cost
Add south of Delta storage	Reduce Conflicts, Equitable, Affordable, Implementable	Generates water supply benefits and flexibility to meet pumping windows	Site specific impacts, redirected impacts, cost
Add in-Delta storage connected to Clifton Court(100K to 200K AF) Multiple screened intakes.	Reduce Conflicts, Equitable, Durable, NSRDI	Filling this storage from the Delta through multiple intakes, increases flexibility for managing pumping to curtail environmental impacts. Improve water quality and fisheries Jul-Aug-Sep	Water Quality in the reservoir and TOC